

Claims

1. Hydraulic control system for a mobile equipment,
5 comprising a shovel retained on a boom which is adapted to be pivoted by means of a boom cylinder, which may be pivoted by means of a shovel cylinder adapted to be controlled by means of a shovel control unit, wherein the shovel position may be fed back via
10 a transmitting member to an orientation control device whereby the shovel cylinder may be controlled, and wherein the orientation control device comprises an actuation head in operative connection with the transmitting member, the position change of said
15 actuation head during a pivoting movement of the shovel being convertible via a control device into a control signal for keeping the shovel in a target angular position, characterized in that a basic position of the actuation head is variable, and in
20 that the transmitting member is connected with the actuation head such that both downward pivoting of the shovel and upward pivoting of the shovel from its target angular position results in a positional change of the actuation head, so that depending on
25 this positional change a control signal for returning the shovel into its target angular position at the shovel cylinder may be emitted, and also the actuation head may be reset in the direction of its pre-set basic position.
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2. The control system in accordance with claim 1, wherein the actuation head is a control lever of a pilot control device, the electric or hydraulic control signals of which are supplied to the shovel
35 control unit.

3. The control system in accordance with claim 2,
wherein the pilot control device comprises two
5 hydraulic pilot control elements whose control ports
are connected via signal lines to control ports of
the shovel control unit.
4. The control system in accordance with claim 3,
wherein the shovel control unit comprises a shovel
10 pilot control device, the control ports of which are
connected via control lines to control chambers of a
shovel proportional valve, the signal lines being
connected via shuttle valves with the control lines,
so that the higher one of the control pressures in
15 the control chambers prevails.
5. The control system in accordance with any one of the
preceding claims 2 to 4, wherein the control lever is
20 connected via a spring assembly with the transmitting
member and via another, oppositely acting tensile
spring assembly with an actuation lever whereby the
target position of the control lever may be adjusted.
6. The control system in accordance with any one of
25 claims 2 to 4, wherein the control lever is connected
via a lever mechanism with the transmitting member
and an actuation lever for adjusting the target
position, the lever mechanism being realized such
30 that a target pivotal position of the control lever
may be adjusted through the intermediary of the
actuation lever, and the control lever may be
adjusted when the shovel has been moved from its
target angular position.

7. The control system in accordance with claim 5 or 6, wherein the end portion of the transmitting member linked to the spring assembly or to the lever mechanism, respectively, is mounted on a frame of the equipment by means of a movable bearing.
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8. The control system in accordance with any one of claims 3 to 7, wherein a pressure port of the pilot control device is adapted to be connected with a control oil pump or a tank via a switching valve.
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